



US005375164A

# United States Patent [19] Jennings

[11] Patent Number: 5,375,164

[45] Date of Patent: Dec. 20, 1994

[54] MULTIPLE LANGUAGE CAPABILITY IN AN INTERACTIVE SYSTEM

[75] Inventor: Terry D. Jennings, Westminster, Colo.

[73] Assignee: AT&amp;T Corp., Murray Hill, N.J.

[21] Appl. No.: 928,381

[22] Filed: Aug. 12, 1992

## Related U.S. Application Data

[63] Continuation-in-part of Ser. No. 889,007, May 26, 1992.

[51] Int. Cl.<sup>5</sup> ..... H04M 1/00; G06G 7/00[52] U.S. Cl. .... 379/88; 379/67;  
379/89; 364/419.01; 364/419.02; 381/51;  
434/157; 434/185[58] Field of Search ..... 379/88, 89, 67;  
364/419.01, 419.02, 419.05, 419.08, 419.16;  
434/157, 156, 185, 307, 308; 381/43, 51;  
340/721

[56] References Cited

## U.S. PATENT DOCUMENTS

4,566,078 1/1986 Crabtree .  
4,615,002 9/1986 Innes .  
4,654,798 3/1987 Taki et al. .... 364/419  
4,700,322 10/1987 Benbassat et al. .... 364/514,882,681 11/1989 Brotz ..... 364/419  
5,120,945 6/1992 Nishibe et al. .... 235/379  
5,148,541 9/1992 Lee ..... 395/600

## OTHER PUBLICATIONS

"Multiple Language Capability in an Interactive System", International Technology Disclosures, vol. 9, No. 5, May 25, 1991, Anonymous.

Primary Examiner—James L. Dwyer

Assistant Examiner—Fan Tsang

Attorney, Agent, or Firm—Joseph J. Opalach

[57] ABSTRACT

The data entry portion of a voice messaging system is constructed to be language, culture, or market segment independent. In particular, the design of the voice messaging system is based upon "semantic expressions," which are used to evaluate any language, culture, or market specific data that is entered by a user. In particular, each type of data entry is treated as a "semantic expression" having an identifier. This identifier is mapped into a plurality of rules, each rule providing instructions on how to interpret the input data for a particular language, culture, or market segment. The rules can recursively call other rules to provide additional flexibility in interpreting information that is entered by a user.

10 Claims, 4 Drawing Sheets

